

# NewsRelease



National Aeronautics and  
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For Release: Sept. 20, 1999

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RELEASE NO. 99-068

## COMMERCIAL DEVELOPMENT UNDERWAY

# NASA Solar Propulsion Technology Honored

A space-age thermoplastic hailed as a breakthrough in solar propulsion and power has been named one of the 100 most significant new technical products of 1999. The NASA invention has been adapted for use on solar-powered satellites by SRS Technologies, Huntsville, Ala.

Last month, the company made a further commitment to commercial development of the technology by signing an exclusive manufacturing and marketing license with NASA Langley Research Center, Hampton, Va. Future products are expected to include both aerospace and consumer applications.

The R&D 100 award is presented annually by *Research and Development* magazine to the innovators of the 100 most technologically significant new products of the year from around the world. Selections are made by a panel of distinguished scientists and engineers.

When cast as large thin films, the thermoplastic material serves exceptionally well as solar thermal concentrators for space-based propulsion and power concepts and, potentially, for inflatable large space antennas.

NASA Langley researchers developed the thermoplastic technology – actually two similar polyimide chemical compounds – in a successful effort to improve upon the solar energy absorption and reflectance of existing space-based systems. Either compound can take the form of a highly-transparent and nearly colorless thin film which has good solar energy characteristics, is resistant to the environmental extremes of space, and is lightweight, simple and economical for space launch applications.

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Benefits to the end user can be dramatic. For example, SRS has developed fabrication processes to cast precise thin film segments for use as power augmentation panels for a satellite manufacturer that promise to increase the power production of the satellite's standard photovoltaic arrays.

Future aerospace applications may include use in optics for space telescopes or spaceborne lasers; antennas for communications, surveillance and positioning; solar shielding; and aircraft and missile cabling.

Commerically, the technology may be applied to many products, including as ultraviolet-resistant additives to paint, as components in flexible printed circuit boards and in liquid crystal displays.

Individuals to be honored Sept. 23 at the Chicago Museum of Science and Industry are NASA Langley chemists Anne St. Clair and Terry St. Clair and SRS chief scientist Paul Gierow.

In the 32 years of NASA Langley's participation in the R&D 100 competition, 31 NASA Langley developments have been selected, contributing significantly to the recognition of NASA as a source of technical excellence.

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**NOTE:** A photograph is available to illustrate this release.